

ABSTRACT OF THE DISCLOSURE

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3 A method for tracking N fluid materials and their associated interfaces during
4 simulated fluid flow is disclosed. A microgrid cell methodology is embedded
5 on a regular macrogrid to subdivide and then tag fluid materials in a
6 computational system preferably using a prime numbering algorithm. The
7 motion of microgrid cells is tracked based on local velocity conditions,
8 rectifying small anomalies by a coupled evaluation of local volume fraction
9 fields and global mass conservation. Volume fractions can be calculated at
10 any time step via an evaluation of the prime locations so that average cellular
11 density and viscosity values can be regularly updated.